

Attorney Docket No. 1365

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Donald Lee Morrow Date: March 14, 2003
Serial No.: 09/760,156 Group Art Unit: 1638
Filed: January 12, 2001 Examiner: David H. Kruse
For: "INBRED MAIZE LINE PH5DR"

Assistant Commissioner for Patents
Washington, D.C. 20231

RULE 132 DECLARATION
OF
DR. DINAKAR BHATTRAMAKKI

Sir:

I, Dinakar Bhattramakki, Ph.D., do hereby declare and say as follows:

1. I am skilled in the art of the field of the invention. I have a Ph.D. in Plant Molecular Genetics from the University of Illinois at Urbana-Champaign. I have a Bachelor of Science degree in Agricultural Sciences from the University of Agricultural Sciences, Bangalore, India. Since 1997 I have been engaged in the analysis of molecular markers for plants. I have supervised the Molecular Marker Applications lab at Pioneer Hi-Bred International, Inc. from January 2002 until the present.
2. I am familiar with the methods used in the analysis of Simple Sequence Repeat, SSR, marker data for inbred PH5DR conducted at Pioneer Hi-Bred International, Inc. The analysis of the SSR profile of inbred PH5DR may be accomplished without any undue experimentation. The SSR profile for inbred PH5DR is attached hereto.
3. Means of performing this genetic marker profile are well known in the art. SSRs are genetic markers based on polymorphisms in nucleotide sequences. The PCRTM detection of SSRs is accomplished by using two oligonucleotide primers flanking the polymorphic segment of DNA. Amplification is accomplished through

Appendix C

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repeated cycles of heat denaturation of the DNA followed by annealing of the primers to their complementary sequences at low temperatures, and extension of the annealed primers with DNA polymerase.

4. Markers are scored following amplification and gel electrophoresis of the amplification products. Scoring of marker genotype is based on the size or weight of the amplified fragment. While variation in the primer used or in laboratory procedures can affect the reported marker score, relative values remain constant regardless of the specific primer or laboratory used.

5. Primers that may be used to identify the SSR markers reported herein are publicly available and may be found in the Maize DB on the World Wide Web at agron.missouri.edu/maps.html (sponsored by the University of Missouri), in Sharopova et al. (Plant Mol. Biol. 48(5-6):463-481) and/or in Lee et al (Plant Mol. Biol. 48(5-6); 453-461). Markers shown for PH5DR are the publicly available markers in the sources listed above for which PH5DR was tested and shown to be homozygous.

6. Map information is provided by bin number as reported in the Maize DB. The bin number digits to the left of decimal point typically represent the chromosome on which such marker is located, and the digits to the right of the decimal typically represent the location on such chromosome.

7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date:

By:



Dinakar Bhatramakki

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| Public Name of Marker | bin # | PH5DR base pairs |
|-----------------------|-------|------------------|
| phi427913 | 1.01 | 129.38 |
| bnlg1014 | 1.01 | 131.78 |
| phi056 | 1.01 | 255.30 |
| bnlg1083 | 1.02 | 221.86 |
| bnlg1127 | 1.02 | 114.36 |
| bnlg1953 | 1.02 | 247.56 |
| bnlg1429 | 1.02 | 190.09 |
| phi109275 | 1.03 | 126.31 |
| bnlg1203 | 1.03 | 308.35 |
| bnlg1484 | 1.03 | 135.90 |
| bnlg1886 | 1.05 | 145.64 |
| bnlg1057 | 1.06 | 274.00 |
| bnlg1041 | 1.06 | 194.58 |
| bnlg1615 | 1.06 | 211.96 |
| bnlg1556 | 1.07 | 201.94 |
| phi335539 | 1.08 | 88.58 |
| phi423298 | 1.08 | 133.68 |
| phi002 | 1.08 | 73.53 |
| bnlg1331 | 1.09 | 121.03 |
| phi011 | 1.09 | 226.98 |
| phi308707 | 1.10 | 131.11 |
| phi227562 | 1.11 | 306.93 |
| phi064 | 1.11 | 94.65 |
| phi402893 | 2.00 | 218.34 |
| phi96100 | 2.01 | 284.43 |
| bnlg1017 | 2.02 | 195.57 |
| bnlg2277 | 2.02 | 292.29 |
| bnlg1064 | 2.03 | 190.27 |
| bnlg1018 | 2.04 | 134.33 |
| bnlg1138 | 2.06 | 222.14 |
| bnlg1396 | 2.06 | 136.79 |
| phi251315 | 2.07 | 123.79 |
| phi427434 | 2.08 | 130.91 |
| phi435417 | 2.08 | 217.99 |
| bnlg1141 | 2.08 | 152.92 |
| bnlg1940 | 2.08 | 214.68 |
| phi127 | 2.08 | 109.62 |
| bnlg1520 | 2.09 | 285.85 |
| phi101049 | 2.10 | 234.30 |
| phi453121 | 3.00 | 223.43 |
| phi104127 | 3.01 | 162.19 |
| phi404206 | 3.01 | 303.14 |
| phi193225 | 3.02 | 136.71 |
| phi374118 | 3.02 | 213.36 |
| bnlg1144 | 3.02 | 134.68 |
| bnlg1647 | 3.02 | 137.52 |
| bnlg1523 | 3.03 | 264.89 |

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| Public Name of Marker | bin # | PH5DR base pairs |
|-----------------------|-------|------------------|
| bnlg1452 | 3.04 | 125.59 |
| bnlg1035 | 3.05 | 101.06 |
| phi053 | 3.05 | 171.68 |
| phi102228 | 3.06 | 126.84 |
| bnlg1160 | 3.06 | 222.23 |
| bnlg1951 | 3.06 | 121.12 |
| bnlg2241 | 3.06 | 142.63 |
| phi072 | 4.00 | 139.43 |
| phi213984 | 4.01 | 284.60 |
| phi295450 | 4.01 | 197.12 |
| bnlg1162 | 4.03 | 92.86 |
| phi308090 | 4.04 | 218.64 |
| phi096 | 4.04 | 234.58 |
| phi438301 | 4.05 | 211.81 |
| bnlg1159 | 4.05 | 147.81 |
| bnlg1755 | 4.05 | 214.54 |
| bnlg1937 | 4.05 | 227.36 |
| bnlg1265 | 4.05 | 223.71 |
| phi079 | 4.05 | 177.74 |
| bnlg1189 | 4.07 | 131.56 |
| bnlg2244 | 4.08 | 199.58 |
| bnlg1006 | 5.00 | 229.38 |
| phi396160 | 5.02 | 298.12 |
| phi109188 | 5.03 | 161.52 |
| bnlg653 | 5.04 | 151.67 |
| phi330507 | 5.04 | 131.59 |
| phi331888 | 5.04 | 130.72 |
| bnlg1208 | 5.04 | 118.88 |
| bnlg1892 | 5.04 | 149.85 |
| phi333597 | 5.05 | 216.51 |
| phi085 | 5.06 | 248.06 |
| bnlg1118 | 5.07 | 82.56 |
| phi423796 | 6.01 | 128.39 |
| phi389203 | 6.03 | 306.15 |
| phi452693 | 6.04 | 123.30 |
| phi445613 | 6.05 | 96.95 |
| bnlg1174 | 6.05 | 218.72 |
| phi299852 | 6.07 | 117.30 |
| phi364545 | 6.07 | 131.46 |
| bnlg1740 | 6.07 | 230.27 |
| bnlg1759 | 6.07 | 125.81 |
| phi070; umc1063 | 6.07 | 83.47 |
| phi034 | 7.02 | 119.55 |
| bnlg2271 | 7.03 | 233.69 |
| phi260485 | 7.05 | 285.39 |
| phi051 | 7.05 | 138.57 |
| phi116 | 7.06 | 164.92 |
| phi420701 | 8.00 | 289.29 |

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| Public Name of Marker | bin # | PH5DR base pairs |
|-----------------------|-----------|---------------------|
| bnlg1194 | 8.02 | 174.99 |
| phi100175 | 8.03 | 145.34 |
| bnlg2082 | 8.03 | 172.52 |
| phi115 | 8.03 | 290.66 |
| phi121 | 8.03 | 93.90 |
| bnlg2046 | 8.04 | 326.12 |
| bnlg1176 | 8.05 | 217.94 |
| bnlg1065 | 8.07 | 226.87 |
| bnlg1056 | 8.08 | 94.48 |
| phi015 | 8.08 | 100.05 |
| phi233376 | 8.09 | 136.10 |
| bnlg2122 | 9.01 | 237.09 |
| phi032 | 9.04 | 231.00 |
| phi108411 | 9.05 | 126.04 |
| phi236654 | 9.05 | 117.08 |
| bnlg1375 | 9.07 | 164.93 |
| bnlg1129 | 9.08 | 300.56 |
| phi041 | 10.00 | 202.94 |
| phi96342 | 10.02 | 249.64 |
| phi059 | 10.02 | 143.60 |
| bnlg1079 | 10.03 | 170.34 |
| bnlg1655 | 10.03 | 126.51 |
| phi050 | 10.03 | 83.27 |
| phi062 | 10.04 | 157.81 |
| bnlg1074 | 10.05 | 183.85 |
| bnlg1185 | 10.07 | 188.95 |
| phi109642 | 2.03/2.04 | 148.23 |
| bnlg1720 | 1.09/1.10 | 236.44 |
| phi448880 | 9.06/9.07 | 176.99 |